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## **The Export Propensity of Polish SMEs**

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**Abstract:**

In many countries, firms are encouraged to export as a means of contributing to economic growth. The success of small and medium-sized enterprises (SMEs) in industrialized countries has led to the increasing recognition of their role in transition economies – including exports development. The objective of this investigation is to determine the major factors that influence the propensity to export of Polish SMEs within the context of an expanded European Union (EU). Using data from a survey of enterprises in the Gdansk province, we develop a Logit model to explain why some SMEs are exporters and others are not. The results indicate that access to bank loans, knowledge of competing firms, a large share of the domestic market and preparedness for the accession of Poland to the EU are important drivers of export propensity. We find evidence that awareness of special foreign credit available for Polish SMEs has a positive influence on their export propensity, as also does the use of IT tools in distribution and marketing. On the contrary we find that firms which have high profitability in their domestic market, or are concerned about taxation, or possess a large percentage of Polish capital have a reduced propensity to export.

*JEL Classification: C22, C52, L00, P27*

*KEYWORDS: transition economies; export propensity; logit model; small and medium-sized enterprises (SMEs); Poland.*

## 1. Introduction

Small firms<sup>1</sup> have an important role in a transition economy such as Poland. Their importance as sources of employment and value-added, as well as their contribution to future growth, is potentially increased by the prospect of accession to the European Union. The main motivation for writing this paper is to shed some light on the determinants of the export propensity of the SMEs in a transition economy like Poland. To the best of our knowledge such a study has not been undertaken before.

Export orientation has been shown to enhance the probability of survival of SMEs. It is associated with increased productivity and competitiveness (Berry, Rodriguez and Sandee, 2001; Bagchi-Sen, 1999). It also helps them to grow more quickly while at the same time benefiting their national economy by helping to reduce the balance of payments deficit (Levy, Berry and Nugent, 1999; Samiee and Walters, 1999). For such reasons, the governments of many developing and transitional economies are at present encouraging SMEs to sell some of their output in overseas markets, as a particularly desirable policy objective within a general policy stance of promoting the development and growth of SMEs (Leonidou, Katsikeas and Samiee, 2002).

Previous empirical studies of the export behaviour of SMEs have shown that both external factors – a firm's environment, and internal factors – a firm's characteristics, are of importance, especially the internal ones (Bilkey and Tesar, 1977; Kaynak and Kothari, 1984; Yaprak, 1985; Axinn, 1988; Aaby and Slater, 1989; Keng and Jiuang, 1989; Louter et al., 1991; Chetty and Hamilton, 1993; Naidu and Rao, 1993; Calof, 1994; Caughey and Chetty, 1994; Cavusgil and Zou, 1994). In more recent years, these findings have been confirmed by other studies (Moini, 1998; Philip, 1998; Styles, 1998; Shoham, 1998; Zou, Taylor, and Osland, 1998; Leonidou, Katsikeas and Piercy, 1998; Katsikeas, Leonidou, and Morgan, 2000; Leonidou, Katsikeas and Samiee, 2002 and Lages and Lages, 2004). The internal factors, such as characteristics of a firm's structure, operations, and decision-

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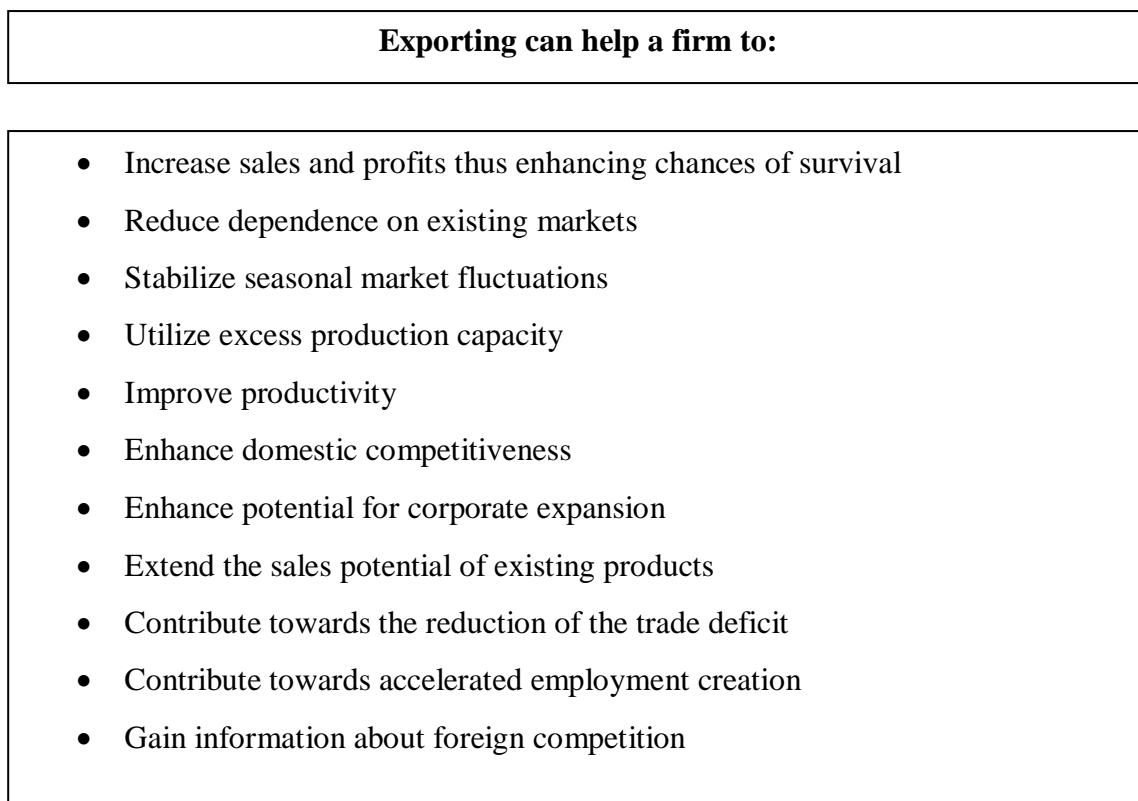
<sup>1</sup> Small firms are defined according to the official EU definition as employing between 10-49 workers.

makers, have been found to correlate with the enterprise's ability to identify suitable export opportunities and exploit them successfully. Managerial characteristics include the managers' age, education, foreign language skills and overseas orientation. The characteristics of the firm that are commonly considered include: firm size, ownership structure of the business, years in business; product competitiveness, foreign market coverage and international experience (Leonidou, Katsikeas and Samiee, 2002). The firm characteristic that has been studied most intensively appears to be firm size and its effect on the propensity to export (i.e. whether exports are non-zero) and/or the intensity of export activities (which is proxied by the share of export sales in total sales). While the evidence is uncertain despite the vastness of the literature (Aaby and Slater, 1989; Philip, 1998), many studies (e.g. Bonaccorsi, 1992; Gemünden, 1991; Miesenbock, 1988) still support a positive but weak relationship between firm size and export propensity. Investigation of the relationship between managerial characteristics and export performance has demonstrated a clear, positive relationship between the manager's educational level and the extent to which the firm is involved in exporting (Axinn, 1988; Keng and Jiuan, 1989; Moini, 1998). On the other hand, the evidence concerning the relationship between the decision-maker's age and export performance is inconclusive: Aaby and Slater (1989) reported a negative relationship while Kaynak and Kuan (1993) found a positive one. It has also been argued that enterprises whose decision-makers speak foreign languages are expected to perform better at exporting than do enterprises with mono-lingual managers (Kaynak and Kuan, 1993; Lautanen, 2000).

The recent success of SMEs in international markets has been coincident with rising trade deficits and other economic problems, but these have driven many developing countries to seek strategies – e.g, reformulation of policy, construction of assistance programmes, to promote, develop and improve the export capabilities of their SMEs. However, sound policies and effective assistance programs can only be developed if policy-makers have a good understanding of the dynamics of SMEs in general as well as the determinants of SMEs' export propensity in particular. Most of the work done on the export behaviour of SMEs has been based on the data pertaining to developed countries. These studies are helpful for improving our understanding of the subject, but a shortage of information

about developing and transitional economies remains; and attempts at general conclusions based on findings from only the leading industrialised economies may be both ‘dangerous and misleading’ (Katsikeas and Piercy, 1993). Many small developing countries, aware of the potential benefits (Figure .), have acknowledged the need to promote export-oriented SMEs in order to achieve sustainable development of an export-led economy, and deal with a structural imbalance (the ‘missing middle’) in their economy (Katsikeas and Piercy, 1993). A number of states have established SME export-promotion schemes as a way of increasing the growth and development of SMEs while at the same time solving or avoiding the ‘missing middle’ problem.

**Figure .: Potential Benefit from Exporting**



Source: Compiled from Berry, Rodriguez and Sandee (2001); Samiee and Walters (1990); Levy, Berry and Nugent (1999).

Over the last several years, Poland has experienced some improvement in exports generally and within this a growing contribution from SMEs. The value of exports by Polish SMEs in 2002 amounted to USD 18.2 billion (compared with USD 15.8 billion in

2001), which implied a 15.1% rise relative to the previous year (GUS, 2003). In the same year, total Polish exports reached USD 41 billion (against USD 36.1 billion in 2001), an increase of 13.6%. So SMEs' exports grew more quickly than did those of the nation as a whole, thus strengthening the role of SMEs in Poland's export performance. Previously the annual increases in exports by SMEs had been smaller than the increases in total exports (8.6% vs. 14.0% in 2001, and 11.6% vs. 15.5% in 2000). The contribution of SMEs to total exports reached 44.5% in 2002 increasing by 0.6 percentage points over the previous year.

In this present paper, we intend to investigate the major factors influencing export propensity of SMEs in Poland, basing on a sample survey of SMEs in Gdansk for the year 2003. In the light of existing literature, we postulate that a Polish SME's propensity to export may be determined by the following internal and external factors. The internal factors are: i) age of the business; ii) firm-size in sales; iii) firm-size in number of employees; iv) ownership structure; v) comparative advantages; vi) technical level of products; vii) the manager's age, educational attainment, foreign language skill, and viii) profitability, risk and cost of the business. External factors such as i) size of the market and competition; ii) tariffs and non-tariff barriers; iii) foreign exchange rate policy, insurance and financial assistance, knowledge about the European Union are also considered. Because of our interest in the export propensity of SMEs (i.e. either an SME is an exporter or it is not), the dependent variable will be dichotomous and the applicable analytical model should come from the binary-choice genre (Griffiths, W. E., Hill, R. C., Judge, G. G., 1993 and Ghatak S., Manolas G., Rontos K., Vavouras I., 2001). We employ the Logit specification, which is described in more detail below. The rest of the paper is organized as follows. The data and methodology are presented in section two. Section three discusses the variables in the model and the estimation techniques. The empirical results are expounded in section four. The final section concludes.

## 2. Data and methodology

The data used in this study have been derived from a survey carried out in Gdansk in the last quarter of 2003 and involving a sample of 125 managers of registered exporting and non-exporting Polish SMEs. The sample comprises manufacturing, service and trading sectors. An extensive questionnaire (available on request) consisting of 40 questions was employed, and professional enumerators were used to ensure the best-quality data and minimize non-sampling error.

For the purposes of the study, Polish small enterprises are defined as those employing between 10 and 49 persons, and those that employ between 50 and 249 persons are classified as medium enterprises. The research objective is to examine the major factors determining export propensity of Polish SMEs by using the Gdansk province as a case study. We employ the Logit model, which is a widely used framework for statistical analysis of dichotomous (binary) dependent variables. In our case we define the dependent variable,  $Y$  - “export propensity”, as  $y_i = 1$  if firm  $i$  exports,  $y_i = 0$  if the firm does not export. Gujarati (1995) states that among the methods used to handle cases where the dependent variable is dichotomous, the four commonly adopted approaches are: the linear probability model (LPM), the Logit model, the Probit model, and the Tobit model. The LPM, even though regarded as the simplest, is considered unattractive, because it implies non-normality of the error term, heteroscedasticity, and the possibility of the estimated probability lying outside the 0-1 bounds (Gujarati 1995, p.576). The problem of estimated conditional probabilities lying outside the logical limits can be overcome by modelling some transformation of the LPM that is not subject to these limits and constructing an estimator for the transformed model from maximum likelihood principles. The Logit and Probit models are examples of this approach; both guarantee that the estimated probabilities will lie between 0 and 1.

From this brief discussion it is clear that, out of the initial four models, the choice of an appropriate model can be narrowed down to two - i.e., the Probit and the Logit models. The Probit and Logit models are quite comparable and give qualitatively similar results.

However, because the logit transformation is somewhat easier to work with (Griffiths et al., 1993, p.751). In a note on ‘Logit versus Probit’, Gujarati (1995, p.568, p.576) concludes that ‘. . . the Logit model is generally used in preference to the Probit’. Pindyck and Rubinfeld (1991, p.256) deem the Logit model to be ‘somewhat more appealing’ than the Probit model. Consequently, we select the Logit model for this part of the investigation. Since in this study, the available data distinguishes whether an SME is an exporter or non-exporter. The dependent variable is a dummy variable taking the value 1 if the SME is an exporter, and the value 0 if the SME is a non-exporter. Therefore the probability that an SME would be an exporter, given its characteristics, could be computed based on the cumulative logistic function. The model development and specification are presented below:<sup>2</sup>

Define

$$z_i = x_i' \beta = \beta_1 + \beta_2 x_{i2} + \dots + \beta_k x_{ik} \quad , \quad i = 1, 2, \dots, N \quad \text{Equation .}$$

Here  $x_i'$  is a  $k$ -element row vector containing the values of a set of explanatory factors (including a constant term) that have been observed for the  $i^{\text{th}}$  firm;  $\beta$  is a  $k$ -element column vector containing the associated coefficients that are to be estimated. Hence,  $z_i$  is an index which potentially ranges from  $-\infty$  to  $+\infty$ .

Let,  $y_i = 1$  if the  $i^{\text{th}}$  SME is an exporter

$y_i = 0$  if the  $i^{\text{th}}$  SME is a non-exporter

$$\pi_i = \text{prob}(y_i = 1)$$

The LPM approach estimates  $\pi_i$  simply as  $p_i = \hat{y}_i$ , with  $y_i = z_i + u_i$ , where  $u_i$  is a random disturbance term. Given the availability of  $\hat{\beta}$  as an estimator for  $\beta$  then, in the LPM,  $p_i = \hat{y}_i = x_i' \hat{\beta}$ . The Logit transformation uses instead  $y_i = F(Z_i + u_i)$ , where  $F(\ )$  is the cumulative distribution function for the Logistic distribution. The estimated

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<sup>2</sup> This section is based on Gujarati (1995).



probability that the  $i^{\text{th}}$  firm is an exporter, conditional on the observed causal factors, is now

$$p_i = \hat{y}_i = F(x_i' \hat{\beta}) = \frac{1}{1 + \exp(-x_i' \hat{\beta})} = \frac{1}{1 + \exp(-\hat{z}_i)} \quad \text{Equation .2}$$

and therefore remain within the open interval,  $(0,1)$ .

The complementary probability that this firm is not an exporter is obviously

$$1 - p_i = 1 - \frac{1}{1 + \exp(-\hat{z}_i)} = \frac{\exp(-\hat{z}_i)}{1 + \exp(-\hat{z}_i)}, \text{ so that the estimated odds ratio in favour of}$$

$$\text{being an exporter is } p_i / (1 - p_i) = \left( \frac{1}{1 + \exp(-\hat{z}_i)} \right) / \left( \frac{\exp(-\hat{z}_i)}{1 + \exp(-\hat{z}_i)} \right) = \frac{1}{\exp(-\hat{z}_i)} = \exp(\hat{z}_i).$$

In information theory, and more generally, the logarithm of an odds ratio is termed a “logit”. We can now see that the Logit approach is so-called because use of the logistic transformation has led us to a modelling strategy in which the unbounded index,  $\hat{z}_i$ , provides a predictor of the logit value, viz:

$$\ln(p_i / (1 - p_i)) = \hat{z}_i = x_i' \hat{\beta} \quad \text{Equation .3}$$

Many authors have discussed the standard methods for estimating Logit models (Nerlove and Press, 1973; Dhrymes, 1978; Dhrymes, 1994b), and others have suggested improvements (Harissis, 1986; Skovgaard, 1990; Ghatak, Manolas and Vavouras, 2002). Given the non-linear nature of the logistic transformation, the coefficients of a Logit model are typically estimated using the maximum likelihood method. A given slope coefficient shows how the log of the odds (that an individual SME will be an exporter) changes as the corresponding explanatory variable changes by one unit, or – for regressors that are categorical, as an attribute different from that of the base category is considered. The statistical significance of the slope coefficients may be assessed from their respective standard errors,  $t$ -ratios or  $p$ -values. A test of the null hypothesis that all the regression coefficients in the model are zero can be done via the likelihood ratio test where the chi-square test statistic has  $k-1$  degrees of freedom for overall model fit. The

conventional measure of goodness of fit,  $R^2$ , is not particularly meaningful in binary regressand models (Gujarati, 2003 page 605). Measures with a similar purpose to  $R^2$ , called Pseudo  $R^2$ , are available, and there are a variety of them (Long, 1997 pp. 102-113). We have chosen to use the McFadden (Pseudo-) $R^2$ , which ranges between 0 and 1. For comparing several model specifications, we present the percentage correct predictions and Pseudo-  $R^2$  statistics to evaluate model performance.

### **3. The Explanatory Variables in the Model and Estimation Techniques**

Our questionnaire design was informed by current literature, particularly the existing theory with regards to several aspects of the export behaviour of SMEs. Thus, the exercise at hand began with a selection of variables that could be defended on theoretical grounds as potentially relevant to the export decision. In addition to the requirement of theoretical coherence, our specification search was also constrained by data availability and the statistical requirement that the model be firstly identifiable – i.e. have empirically meaningful parameters, and secondly amenable to estimation with appropriate precision. The “general to specific” strategy for model construction (Hendry, 2000; Krolzig H. and Hendry D., 2000) argues that the initial exclusion of variables that might in fact be relevant is far more dangerous than the initial inclusion of variables that might later be assessed as irrelevant. The selection of potential explanatory variables therefore favoured initial inclusion, rather than exclusion, of those variables for which the theoretical justification was marginal. The initial selection of 66 potential explanatory independent variables is listed in ten groups as follows:

1. Structural characteristics of the Firm;
2. Size, Growth and Age of the Firm;
3. Comparative Advantages of the Firm;
4. Research and Development;
5. Age, Knowledge and Education Level of Managers of the Firm;
6. Risk, Cost and Profit of the Firm;
7. Finance of Firm;

8. Market and Competition;
9. Government Policy and Assistance for export activities;
10. Knowledge and opinions about the European Union.

In principle, a Logit model could be fitted to the full set of potential explanatory variables and exclusion of some of these as irrelevant could be based on diagnostic statistics. For this exercise in practice, model construction was not so straightforward. Firstly the number of respondents is not large relative to the number of potential explanatory variables. The resulting low number of degrees of freedom limits the precision of estimation. At the very least, the exclusion of variables should proceed in a step-wise fashion, beginning with those showing least statistical significance, so as to limit the risk of mistaken exclusion as a consequence of low precision.

In this particular exercise the low numbers of degrees of freedom was aggravated by instances of non-response. An additional difficulty was that many of the explanatory variables are multinomial, having only a limited number of possible values; some are in fact binary. This made multicollinearity, even perhaps exact multicollinearity, a serious practical problem, in that the sequence of binary or multinomial values for one explanatory variable might be almost or even exactly the same as the sequence of values for some other variable or some combination of other variables.

In summary, the initial model was statistically ill-conditioned providing an insecure basis for inference. Furthermore, the highly non-linear Logit model is fitted by numerical methods rather than by application of an analytically defined solution. The ill-conditioning limited the reliability of these numerical methods. Consequently the initial general – to – specific reduction of the list of potential explanatory variables was based upon OLS estimation of a linear probability model. Although the shortcomings of the linear probability model argue against using it to arrive at the final model, the sturdiness of OLS estimation made it a practical method for reducing the dimensionality of the model to a point at which we could use a Logit formulation.

#### 4. The Empirical Results on Export Propensity for Polish SMEs

This section reports (Table .) our preferred Logit model, thus offering an empirically validated explanation of why some SMEs are exporters and some are not.

Model (1) is the model that results from the initial general – to – specific reduction described above. It has a sufficiently reduced dimensionality so that our estimation software<sup>3</sup> is able to estimate a logit formulation. The total number of useable cases was 113 (out of the total sample of 125 enterprises) as 12 of the questionnaires had missing values for several variables. Model (1) overall is significant at better than the 0.005 level according to the Likelihood Ratio Test Statistic. The model predicts 97% of the responses correctly and the McFadden's  $R^2$  is 0.83. However, the coefficients on many factors are not statistically significant. These include the firm's sector (VA3), legal status (VA5), size in number of employees (VB1), the manager's perception about the importance of acting with promptness (VD2), the extent of IT tools used in office work (VE5), perception of direct competition (VJ3), willingness to invest abroad (VK6), the level of knowledge of European Union markets (VL1) and the manager's opinion about the influence upon Polish enterprises of the accession of Poland to the EU (VL3).

Further reduction, now within the Logit framework, led via Model (2) to Model (3), for which 115 cases were useable. Although, McFadden's  $R^2$  falls from 0.83 to 0.67 as the number of explanatory variables is reduced, the percentage of correct within-sample predictions declines only marginally from 97% in Model (1) to 94% in Model (3).

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<sup>3</sup> LIMDEP

**Table .: Empirical results from estimation of the Logit model**

Variable Code	Model 1		Model 2		Model 3	
	$\beta$ -Coeff.	p-value	$\beta$ -Coeff.	p-value	$\beta$ -Coeff.	p-value
VA1	7.1527	0.1080	ns	ns		
VA3	ns	ns				
VA5	ns	ns				
VB1	ns	ns	ns	ns		
VA6	-0.0427	0.3034	-0.0600	0.0821	-0.0587	0.0633
VD2	ns	ns	ns	ns		
VD5	-4.4564	0.1623	ns	ns		
VE3	ns	ns				
VE5	ns	ns	ns	ns		
VE7	7.3786	0.1192	4.2250	0.0554	1.4258	0.1180
VH5	-7.1007	0.1004	-2.1888	0.0554	-1.2265	0.1471
VJ1	18.7839	0.4590	8.1251	0.0018	6.7184	0.0011
VJ2	0.0988	0.0836	0.0574	0.0154	0.0528	0.0087
VJ3	ns	ns	ns	ns		
VK1	-6.6244	0.1008	-2.7142	0.0594	-2.2950	0.0558
VK6	ns	ns				
VI1	10.5454	0.0549	4.6931	0.0051	3.6455	0.0029
VI3	3.1174	0.3216	3.6391	0.0100	3.0559	0.0036
VL1	ns	ns				
VL3	ns	ns	ns	ns		
VL4	10.0769	0.0796	5.9485	0.0039	4.5361	0.0013
Constant	-16.9824	0.5773	-2.1158	0.6027	-3.5274	0.3140
Cases	113		113		115	
LRTS (Model Chi-Squared)	115.32(0.00); with 21 d.f		99.70(0.00); with 16 d.f		93.69(0.00); with 9 d.f	
McFadden R <sup>2</sup>	0.83		0.72		0.67	
% of Correct Prediction	97%		96%		94%	

Notes: ns – the variable was initially included in a more general model but was found to be not statistically significant; d.f – degree of freedom; LRTS (Model Chi-Squared) – Likelihood Ratio Test Statistics, with the figures in brackets being the associated *p* values.

Our preferred model is Model (3), in which all variables have an anticipated sign and most are significant by standard criteria. The variables that appear to be most likely to have an influence on export propensity of Polish SMEs are:

- the capital structure of the enterprise (VA6);
- the extent of use of IT tools in distribution and marketing (VE7);
- the profitability of the enterprise in the domestic market (VH5);
- the major markets of the enterprise (VJ1);
- the number of competing firms in the domestic market (VJ2);
- the perception of difficulties in connection with export operations (VK1);
- the essential sources of the enterprise's finance (VI1);
- knowledge of where to obtain special credit (VI3);
- the extent of preparations for the accession of Poland to the EU (VL4).

Table 4.2 summarises the estimated coefficients attaching to these variables in our preferred model. A positive (negative) coefficient for a particular variable is evidence of a positive (negative) influence of that variable upon the probability of exporting. The non-linear transformation employed in a logit model means that parameters being estimated do not directly indicate the magnitude of response of export propensity to the regressors; they do however indicate the *relative* magnitude of response.

The capital structure variable (VA6) records the percentage of domestic capital. This factor is estimated to have a non-zero influence with a low risk of type 1 error ( $p=0.063$ ). The negative sign implies that enterprises having a high percentage of domestic capital are relatively less likely to be exporters. The weakening of the Polish currency during 2002 and 2003<sup>4</sup> may thus provide a two-fold stimulus to exports – directly through the reduced foreign price of Polish goods and indirectly through encouraging additional foreign investment in Polish SMEs.

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<sup>4</sup> *Inflation Report*, Monetary Policy Council, National Bank of Poland, Warsaw, May 2004

**Table .: Detailed empirical results from estimation of the logit model**

<b>Code</b>	<b>Variable</b>	<b>Category</b>	<b>Coeff.</b>	<b>Std.Err.</b>	<b>t-ratio</b>	<b>P-value</b>
VA6	Capital structure of the enterprise	Percentage of Polish capital	-0.0587	0.0316	-1.857	0.0633 *
VE7	A significant extent of IT tools in distribution and marketing used by the enterprise	Yes = 1	1.4258	0.9120	1.563	0.1180 **
VH5	Is the enterprise profitable in domestic market	Yes=1	-1.2265	0.8459	-1.450	0.1471 **
VJ1	Are the firm's major markets national (vs. local)	Yes=1	6.7184	2.0656	3.253	0.0011 *
VJ2	Competing firms in domestic market	Number of enterprises	0.0528	0.0201	2.624	0.0087 *
VK1	Perception about major problems in connection with export operations	Taxation	-2.2950	1.2002	-1.912	0.0558 **
VI1	Essential sources of enterprise's finance	Bank loan	3.6455	1.2227	2.982	0.0029 *
VI3	Knowing where to obtain special foreign credit available for Polish SMEs	Yes=1	3.0559	1.0489	2.913	0.0036 *
VL4	Action has been taken to prepare for the accession of Poland to the EU	Yes=1	4.5361	1.4113	3.214	0.0013 *
	Constant		-3.5274	3.5035	-1.007	0.3140

Source: Drawn up by author. \* = significant at the 5% level, \*\* = significant at the 10% level

Note: The sample consists of the 115 enterprises used in the estimation of the Model (3)

A relatively weak zloty appears to be a necessary condition for increased exports by domestic firms, which need to compete on price in order to boost their foreign sales. As these firms and their products are, as a rule, still completely unknown on foreign markets, they have to compete for buyers by cutting the prices of the products they offer. However, in addition to a weaker zloty that allows Polish companies to compete on price, if domestic enterprises want to expand their exports, they must acquire the skills necessary in operating on international markets and secure the funds required for investment, introduction of innovations, and promotion of their products. Unfortunately, Polish enterprises lack these skills and resources to export. Furthermore, joint capital and foreign companies have no difficulty in securing funds for their development and overcome the problem of lacking resources necessary to export, such as finance, physical or human capital. These enterprises did not have to confront such formidable obstacles hindering their development as were faced by domestic companies and have higher probability of being an exporter.

We can safely assume that in the years to come IT technology will increasingly penetrate Polish society. The use of IT technologies in business activities is a particular instance. In our preferred model the self-assessment of the extent to which an enterprise uses IT tools in distribution and marketing (VE7) only narrowly missed statistical significance by standard criteria ( $p = 0.118$ ) and was estimated to have the expected positive influence on export propensity, so is retained in the model. Extensive use of IT technology offers new opportunities for enterprises to improve the efficiency of business operations in foreign markets, and to reduce costs associated with (for example) customer relationship management. A willingness to engage with IT support for business is therefore likely to facilitate export ambitions. In passing, we note that other variables associated with research and development failed to gain empirical support.

The profitability of an enterprise in its domestic market might be thought to be important, the argument being that a firm needs to secure its domestic markets as a strong foundation from which to build export success. In fact this variable (VH5) has the lowest



significance ( $p = 0.1471$ ) of those retained in our preferred model and takes a negative sign, which is counter-intuitive according to the preceding argument. We offer the rationale that the ownership and management structures of SMEs are more conducive to “satisficing” behaviour than is the case for large corporations, particularly those that are publicly owned. Where the SME owners, on occasion an owner-manager, adopt a satisficing objective then satisfactory profitability in the domestic market may in fact reduce the inclination to develop export markets.

Variable VJ1 records whether a firm sells nationally within Poland or only within a local market. The influence of this variable is estimated to be very significantly non-zero ( $p=0.0011$ ) and with a positive coefficient. It would seem that although profitability within the domestic market is not a significant factor, the geographical extent of engagement with the domestic market is an important driver of the propensity to export.

We find also that the presence of competition in the domestic market (VJ2) is a significantly positive factor in determining export propensity. We might rationalise this by suggesting that the existence of competition within the domestic market promotes both the search for market opportunities abroad and also an organisational effectiveness that enables a firm to take advantage of these.

Our questionnaire asked managers to state whether or not they were concerned about various aspects of the export environment. We find that the extent to which managers are concerned about the taxation regime (VK1) is a significant negative factor in the determination of export propensity ( $p = 0.0558$ ).

The next significant factor in our logit regression is the use of bank loans (VI1). Those enterprises that make significant use of bank loans have a higher probability of being an exporter ( $\beta = 3.6455$ ,  $p = 0.0029$ ) than those that depend on self funding. We rationalise this by positing that serving international markets increases the credit requirements of an

SME; firms that are not willing to take on bank debt may restrict themselves to the domestic market. Increasing globalization has created intense competition within export markets and sellers must seek any competitive advantage that might help them to increase their sales. Flexible payment terms in export have become a fundamental part of any sales package. Favourable payment terms make a product more competitive. In order to offer such terms, where payment is delayed, a enterprise may need more credit to cover the cost of productions such as payments for employees and material supplies or to finance one-off costs associated with export contracts, for example engineering modifications to meet customers' product specifications.

Unsurprisingly, the variable that assesses knowledge of how to obtain special foreign credit (VI3) was very significant ( $\beta = 3.0559$ ,  $p = 0.0036$ ). The importance of obtaining special foreign credits may well be connected with possibility of the development of the firm's strategy, company's competitive position and investment planning. Under programmes supported by European Union Funds such as Export Enterprise Development Programme and Investment Grant Fund, the Polish SMEs may obtain funding of their competitive position on selected export markets. Therefore, the enterprises with high knowledge to obtain foreign credits drive the propensity to export more by the Polish SMEs.

Finally, the enterprises which have taken action to prepare for the accession of Poland to the EU will have higher export propensity ( $\beta = 4.5361$ ,  $p = 0.0013$ ). If the enterprises have taken action to prepare for the accession of Poland to the EU, this may ensure that the enterprises will be able to act effectively against any changes in the home market and keep the enterprises updated with the latest information from the European markets. The well prepared enterprises for the accession of Poland to the EU have more chance to explore the new market and look for the benefits from the EU accession which could bring export opportunities for enterprises to expand their market.

## 5. Conclusion and Policy Recommendations

This research has set out to fit a logit model to cross sectional data collected via a survey questionnaire to explain why some Polish SMEs in Gdansk are exporters and some are not (i.e. “export propensity”). We have found that some factors suggested in the existing literature do not achieve empirical validation in our case study. We have identified a small number of explanatory factors that offer, overall, fairly accurate prediction of which firms within our sample are exporters and which are not. The factors that exert a positive effect on export propensity are:

- access to bank loans;
- use of information technology in marketing;
- knowledge of availability of foreign credits;
- number of competing firms in domestic market;
- domestic share of the market;
- action taken for accession to the EU.

Factors which lower the probability of being an exporter are:

- having a high percentage of domestic capital;
- being concerned about taxation;
- profitability in domestic market.

These results suggest a number of policy initiatives:

- ❖ The information technology sector should be developed, and the use of information technology for marketing should be exploited further by the Polish SMEs in order to increase sales in foreign markets.
- ❖ The access of Polish enterprises to the banking and credit system should be promoted. For example, banks should reduce the requirements and documentation for a loan application.
- ❖ Information about the availability and usefulness of foreign credits available for Polish SMEs should be collated and disseminated by the state and official organizations.

- ❖ Competitiveness of enterprises is one of the important factors influencing the export propensity of Polish SMEs. The Polish SMEs require support in their development activities, strengthening and improving their competitive position in domestic market and adjustment to the EU requirements in the area of norms and standards. Legal regulations should be simplified and assistance should be available for the development of more dynamic SMEs.
- ❖ Support provided by public authorities is the key element of the development of a system of guarantees and warranties such as credit guarantee funds, which facilitate SMEs' access to external sources of financing and expand the capital of the Polish enterprises. Therefore, the credit guarantee institutions should be developed by the government.
- ❖ Government policy should aim at simplifying the form of taxation, increasing tax allowances and reducing tax for new businesses so that small enterprises could take advantage of simplified form of taxation, featuring lower rates and have more opportunities to involve in exporting activities.

A strategy based on the above initiatives would provide the necessary incentives for Poland's small enterprises not only to survive but to help them to grow faster and to prosper in the environment of increased competition in the Single European Market.

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